

Controls SW Group Meeting

March 14, 2024

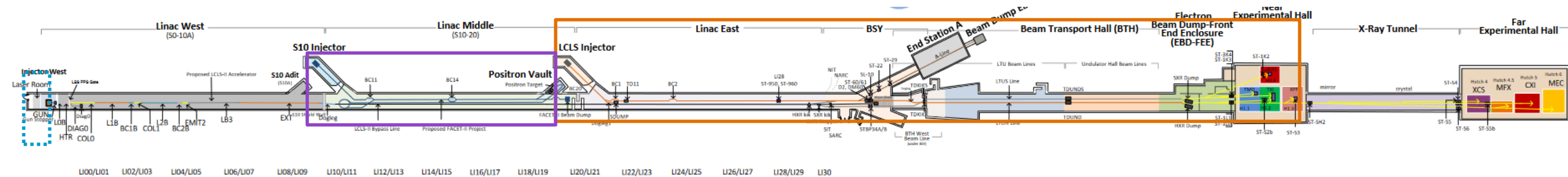
Agenda

1. Machine Recovery
2. Upcoming Schedule
3. Discussion:
Power Outage Resilience
and Recovery Improvement


T. Summers

State of the Accelerators

- **LCLS-SC**
 - Cryoplant recovery complete, linac at 2K. Resume commissioning program – target today to start turning on RF and restarting the injector. Plan for beam to BSYD tomorrow during day shift.
- **FACET** - Beam running to users
- **LCLS-Cu/NC** - Beam running to users
- **SPEAR** - Beam running to users
- **UED** - Beam running to users
- **NLCTA** - Startup scheduled for Monday



Schedule for next few weeks (from Sharon)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
03/11/2024 <ul style="list-style-type: none"> LINAC West PPS/BCS Testing Cryo – D1 Fast Cooldown SSRL PAMM B052 1st Floor Network Outage 7:30am-12pm	03/12/2024 <ul style="list-style-type: none"> LINAC West PPS/BCS Testing – contingency Cryo – D2 Fast Cooldown LCLS NC Users FACET-II Program SSRL AP 	03/13/2024 Downtime Planning Mtg <ul style="list-style-type: none"> LCLS NC Users Cryoplant 2K Operation FACET II Program SSRL User Program UED User Program 	03/14/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Restart FACET II Program SSRL User Program UED User Program 	03/15/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program UED User Program 	03/16 & 03/17 <ul style="list-style-type: none"> LCLS NC Users FACET II Program SSRL User Program UED User Program
03/18/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program UED kHz Test NLCTA Startup - tentative 	03/19/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II POMM SSRL User Program UED kHz Test NLCTA Startup 	03/20/2024 Downtime Planning Mtg <ul style="list-style-type: none"> LCLS NC Users/MD LCLS SC Program FACET II Program SSRL User Program UED kHz Test NLCTA Startup 	03/21/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program UED kHz Test NLCTA Startup 	03/22/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program UED kHz Test NLCTA Startup 	03/23 & 03/24 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program NLCTA Startup
03/25/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL AP UED kHz Test NLCTA Startup 	03/26/2024 <ul style="list-style-type: none"> PAMM (LCLS NC, FACET II, LCLS SC) SSRL AP UED kHz Test NLCTA Startup 	03/27/2024 Downtime Planning Mtg <ul style="list-style-type: none"> PAMM (LCLS NC, FACET II, LCLS SC) SSRL User Program UED kHz Test NLCTA Startup 	03/28/2024 <ul style="list-style-type: none"> PAMM Recovery LCLS NC/FACET II/LCLS SC Program restart SSRL User Program UED kHz Test NLCTA Startup 	03/29/2024 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program UED kHz Test NLCTA Startup 	03/30 & 03/31 <ul style="list-style-type: none"> LCLS NC Users LCLS SC Program FACET II Program SSRL User Program NLCTA Startup

Upcoming downtime periods

This week's PAMM was cancelled

- Next all-linac PAMM is March 26-28
 - Jobs likely due Monday March 18th
 - Area manager/CD planning meeting Tuesday 19th
 - Official job review meeting Thursday 9 am
- Time to start thinking about the summer downtime
 - It's probably only 2 or 3 power outages away! :D

Edit	Start Date ↓	End Date	Program	Machine Status	Description
809	07/05/2024	08/21/2024	All Accelerators	Downtime	FACET & Linac East Summer Downtime
808	07/05/2024	09/30/2024	Linac West	Downtime	Linac West Summer Downtime
813	05/07/2024	05/09/2024	All Accelerators		5/7/2024 - 5/9/2024 PAMM
797	04/23/2024	04/25/2024	All Accelerators	PAMM	4/23/2024 - 4/25/2024 PAMM
796	04/09/2024	04/11/2024	All Accelerators	PAMM	4/09/2024 - 4/11/2024 PAMM
812	04/03/2024	04/03/2024	AOSD LCLS	POMM	4/3 LCLS POMM Bucket
795	03/26/2024	03/28/2024	All Accelerators	PAMM	3/26/2024 - 3/28/2024 PAMM
810	03/19/2024	03/19/2024	FACET-II	POMM	FACET Placeholder POMM

Typical PAMM schedule

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Linac West							
S10 Inj							
Linac Mid							
S20 Inj							
Linac East							
BSY/BTHW							
BTH							
EBD-FEE							

Legend

- TBD
- Permitted Access
- Controlled Access
- Search
- Safety Cert.
- No Access
- POMM
- MD/Comm.
- Users

Plan for rollout of RTEMS NFS/autosave issue

This issue is causing downtime for Operations – they’ve made it a very high priority to fix.

- Had a planning meeting yesterday for implementing the fix described a few weeks ago in this meeting by TID Jeremy Lorelli.
- Fix is well tested on 6100s, has everything built for other rtems platforms: 3100, coldfire
 - We should look if any softioc on the daemons are failing
 - Why issue now, worse in last few months? Or do we just see it because the unstable power?
- If all goes well, we’ll plan to roll it out to many systems this next PAMM
 - Worst offenders are LLRF and MPS, but since Shantha and Jeremy are on vacation, Sonya has offered to test the update on the other platforms using BPM IOCs each next week.

How to make autosave file on demand with channel watcher (thanks Mike!)

How to find list of IOCs currently not able to write to save file (similar for FACET)

```
[physics@lcls-srv01 ~ ]$  
caget `aget -ts ds -w 30 -a name=%SR%_StatusStr` | grep -v  
"not connected" | grep -v "Status unknown" | grep -v "Ok"
```

```
EIOC:IN20:MP11:SR_0_StatusStr Can\'t write .sav file  
EIOC:IN20:RD02:SR_0_StatusStr Can\'t write .sav file  
EIOC:IN20:RD06:SR_0_StatusStr Can\'t write sequence file  
EIOC:IN20:RD07:SR_0_StatusStr Can\'t write .sav file  
EIOC:IN20:RD07:SR_1_StatusStr Can\'t write .sav file  
EIOC:LI21:MP01:SR_0_StatusStr Can\'t write .sav file  
EIOC:LI22:MP01:SR_0_StatusStr Can\'t write .sav file  
EIOC:LI23:MP01:SR_0_StatusStr Can\'t write .sav file  
EIOC:LI24:MP11:SR_0_StatusStr Can\'t write .sav file  
EIOC:LI30:MP01:SR_0_StatusStr Can\'t write .sav file  
EIOC:LTUH:MP11:SR_0_StatusStr Can\'t write .sav file  
EIOC:UNDH:MP01:SR_0_StatusStr Can\'t write .sav file
```

Can use CWget to make a file on demand before rebooting, then CWput to restore it after

```
[physics@lcls-srv01 $IIOC_DATA/eioc-in20-rd07/autosave-req ]$  
ls -als  
-rw-rw-r-- 1 softegr lcls 2434 Apr 2 2013 info_positions.req  
-rw-rw-r-- 1 softegr lcls 1246 Jul 10 2013 info_settings.req
```

```
[physics@lcls-srv01 $IIOC_DATA/eioc-in20-rd07/autosave-req ]$  
CWget info_positions.req > new_info_positions.sav
```

```
[physics@lcls-srv01 $IIOC_DATA/eioc-in20-rd07/autosave-req ]$  
ls -als  
-rw-rw-r-- 1 softegr lcls 2434 Apr 2 2013 info_positions.req  
-rw-rw-r-- 1 physics lcls 4853 Mar 13 13:49 new_info_positions.sav  
-rw-rw-r-- 1 softegr lcls 1246 Jul 10 2013 info_settings.req
```

```
[physics@lcls-srv01 $IIOC_DATA/eioc-in20-rd07/autosave-req ]$  
CWput new_info_positions.sav
```

Discussion

Review of power outage recovery issues and planning for improved resiliency in the future.